

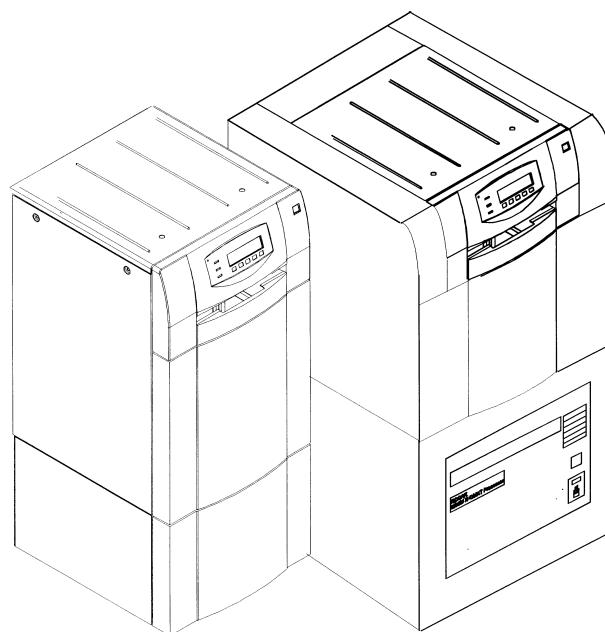


Publication No. II 3477-04
September 2000

Replaces: II 3477-04 June and August 2000

SUPPLEMENT
to the
INSTALLATION INSTRUCTIONS
for
Kodak Miniloader 2000
and
Kodak Miniloader 2000P
SVC's. 3477 – 3479
with
Lightweight Magazine Compatibility

- FOR THE USE OF QUALIFIED SERVICE PERSONNEL ONLY

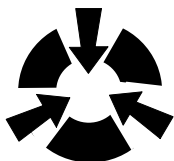


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NOTE

**This equipment includes parts and assemblies sensitive to damage from electrostatic discharge.
Use caution to prevent damage during all service procedures.**

Purpose:

**Included in this DOCUMENT is a description
of the main DIFFERENCES between the
NEW
MINILOADER 2000 with Lightweight Receiving
Magazine and MINILOADER 2000P with
FILM FLIP MECHANISM ASSEMBLY (FFMA)
and earlier versions of the
MINILOADER 2000 and MINILOADER 2000P
This publication must be used in
conjunction with the original publications for service
codes 3477 and 3479 coded as “## 3477-#”.**

Contents

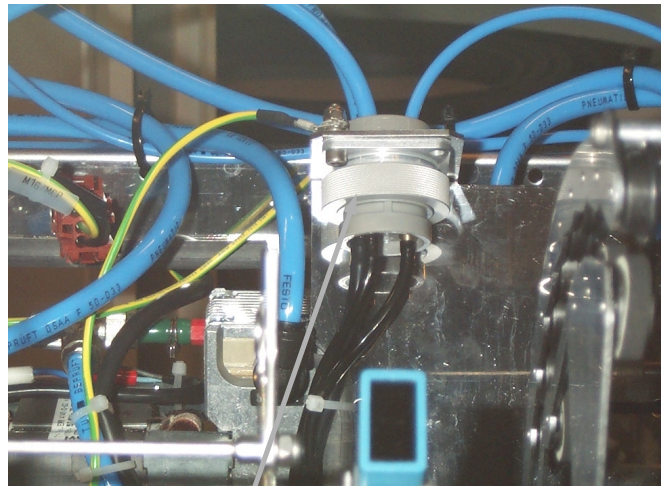
Part One (1)	Install of NEW FFMA in the MINILOADER 2000P
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Part One

Installing THE NEW FFMA onto an early MINILOADER 2000P

1. **WARNING:** Disconnect (Isolate) MINILOADER from the **Mains Power** (either with **Mains Plug** or **Wall-mounted Circuit Breaker**).
2. Remove Panels to expose TOP and SIDES
3. Remove OUTER REAR PANEL
4. Remove INNER REAR PANEL and CHUTE having Disconnected Cables
5. Put INNER REAR PANEL and CHUTE to one side to STORE or DISCARD later
6. Disconnect PNEUMATIC PLUG Assembly and cable Connections from PNEUMATIC UNIT
7. Remove PNEUMATIC UNIT from Miniloader and store carefully for future re-assembly



Pneumatic Plug Assembly

NOTE: On early Units it will be necessary to remove both nuts securing PNEUMATIC UNIT to frame.

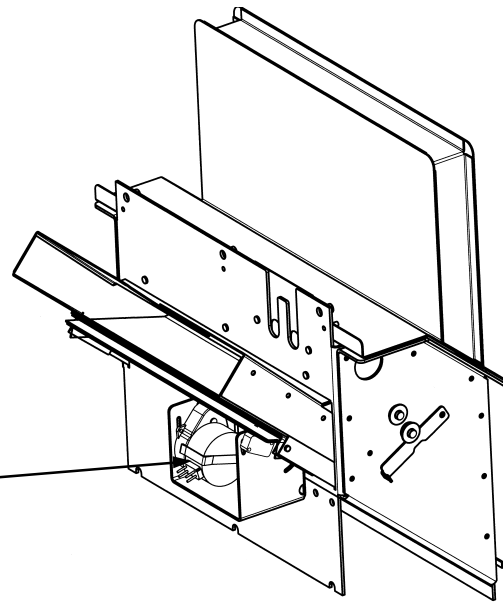
8. Carefully Unpack NEW FFMA and INNER REAR PANEL Assembly.
9. Remove FLIP CHAMBER from FFMA and install INNER REAR PANEL

Adjustment of FLAP MOTOR

10. Before MOUNTING the FLIP CHAMBER check adjustment of Film Flap Motor.
11. LOCATE Flap Motor

-
12. ROTATE Flap Motor by hand until the Maximum Height is reached by the FLAP.
 13. Ensure that there is a GAP of 1 to 1.5 mm between the FLAP and the BOTTOM ROLLER. Adjust MOTOR if necessary.

FLAP MOTOR



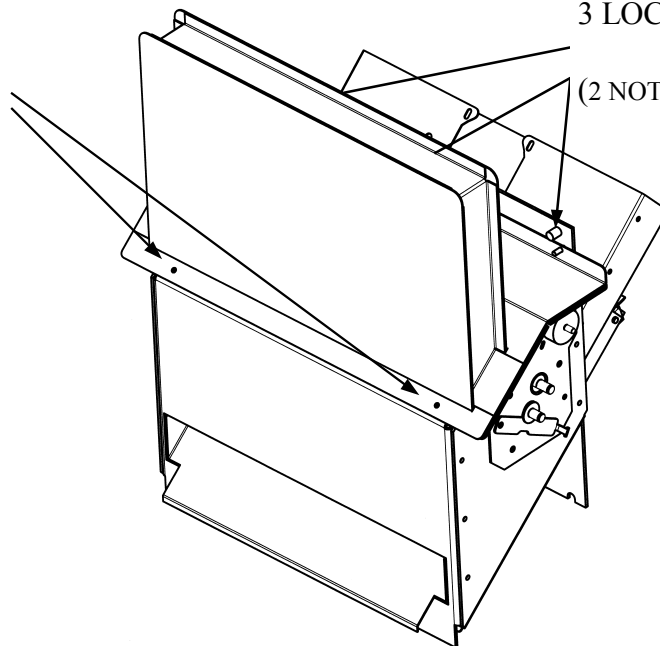
Note:

**The Flip Chamber is retained by the outside SCREWS ONLY.
The INNER STUDS are used only for LOCATION**

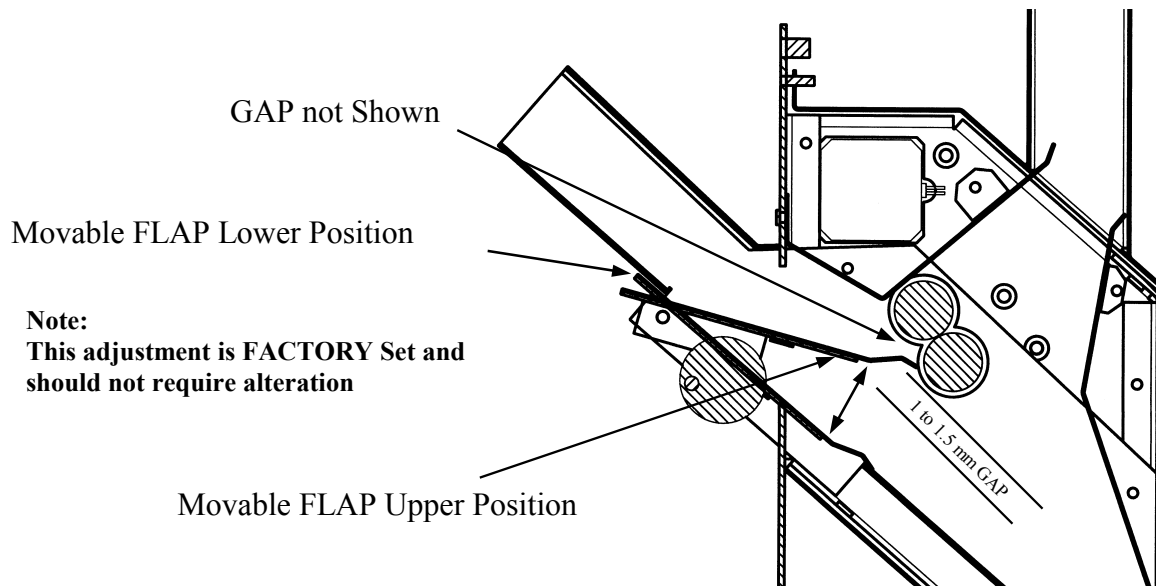
SECURING SCREWS

3 LOCATION STUDS

(2 NOT SHOWN)



Actions



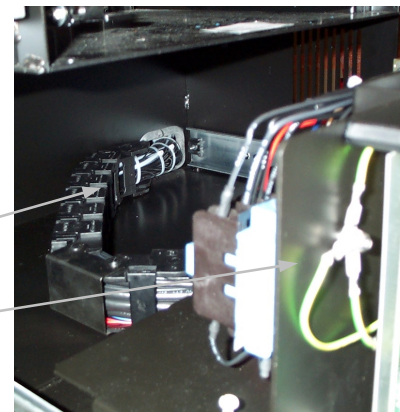
Connection of Cables

NOTE:

The wiring should be started with the NEW FFMA and PANEL REMOVED from the Miniloader 2000P

14. Remove Screws and Pull out "E" Box. In order to ROUTE Additional "E" Box HARNESS M17/MMF from "E" BOX (this is to provide power for the Flap Motor) as described below.

Power Chain

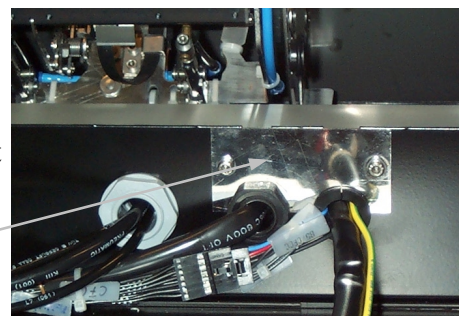


WARNING:

It is important that the Insulation on the Cable is left intact (not cut or damaged) as the power cable runs close to low voltage cables.

15. From the REAR of the machine loosen the Right Cable Gland, then remove the PLATE that holds the GLAND and the GASKET

Plate and Gland



-
16. Connect as follows: LOCATE the position of entry of the cables (right hand side) from the Power Chain to the “E” Box
 17. Feed the cable (with the **Covered Connectors** end first, the cable connector housing Motor End has not been mounted) through the aperture next to the Power Chain.
 18. ROUTE cable along the inside of the power chain and secure with cable ties, one **EVERY OTHER LINK** of the chain.

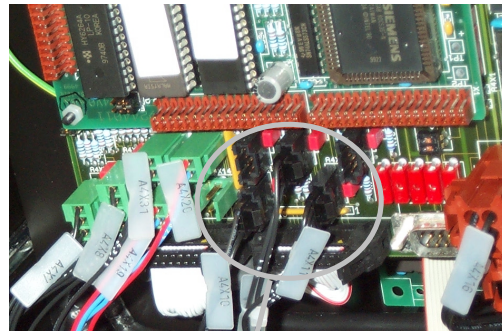
WARNING:

Ensure that the new cable runs in the middle of the Power Chain and not close to the top or bottom. This is IMPORTANT so as to avoid any risk of the cable chaffing against the frame.

19. Attach the NEW FLAP MOTOR Power Cable to the terminal on the A4 PCB in the “E” Box to A4 x 24 and secure with cable ties to the existing Motor Cables that run from A4 PCB. The NEW Cable is in Insulating Tube to prevent it interfering with any Low Voltage cables.

WARNING: Make sure that the loop from the Primary Harness to A4 x 24 is kept short so as not to touch any **LOW VOLTAGE CABLES** or **LOW VOLTAGE COMPONENTS** on either the PCB A8 or PCB A4 when the “E” Box **FLAP** is down for servicing or in the UP position. Or while being moved to either position.

20. Remove Signal Connection (MFFU) A8 x 19 and remove OLD TAG A8 x 19. Replace with enclosed TAG A4 x10 and attach connector to A4 x10.
21. Remove Signal Connection (MFFD) A8 x 24 and remove OLD TAG A8 x 24. Replace with enclosed TAG A4 x 9 at-attach connector to A4 x 9



A4 TAG area

NOTE:

MFFU = Magazine Film Flap in Upper position

MFFD = Magazine Film Flap in Down position

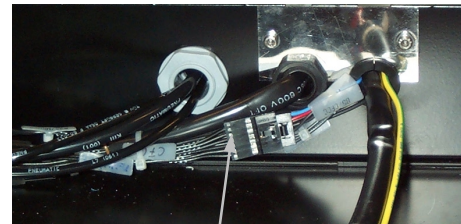
-
22. Route the Power Cable along the Main Harness within the Cable Duct and then out through the BACK PANEL at the Right Hand Slot together with the Compressor and Solenoid Wires.
 23. Outside of the Cable Duct attach the Cable to the existing harness.

WARNING:

Ensure that the cable does not touch any moving parts such as the Film Pocket, Elevator Weights or Guide Rail.

24. Connect M13/MP1 Stepper Motor Extension Cable to the Vacant Matching Connector at the right hand end of the Cable Duct and route it through the BACK Panel at the extreme Right Slot together with the Compressor and Solenoid Wires.
25. Fit the NEW CABLE PROTECTION GASKET around the wire that pass through the frame Slot at the Right Hand Side, mount the NEW HOLDING PLATE and re-tighten the Right Cable Gland.
26. Take the SENSOR EXTENSION CABLE and remove the Terminal Protection Tube from the two wires without a Terminal Housing.

27. Locate the Spare Connector B25/CRMF and the 6 pin Connection attached to the Harness routed along and outside the Back Panel.



6 PIN Connector

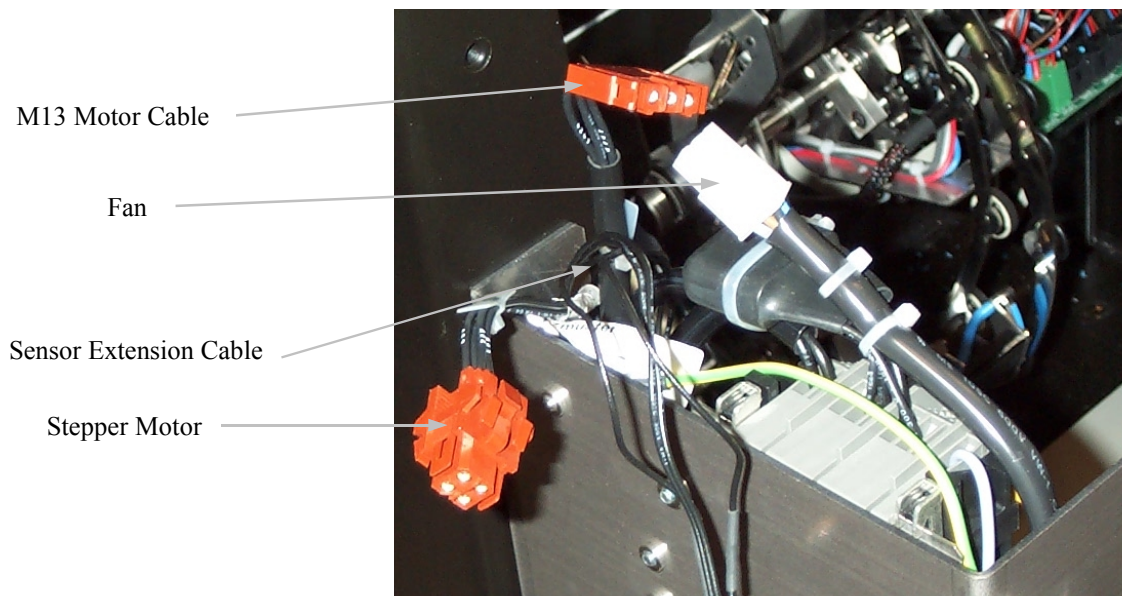
28. Un-plug the 6 pin Connector and insert the free Terminals of the Extension Cable into the free Locations 5 and 6. Re-connect the 6 Pin Connector. This will be B100/MFFU
29. Remove the label of B25/CRMF and fix the NEW B101/MFFD in its place.
30. Connect the 4 – Pin connector of the Sensor Extension Cable to B101/MFFD
31. Mount the BACK PANEL without the FILM CHUTE and route all new cables along the harness along the outside of the BACK PANEL to the LEFT and then up to the POSITION and HEIGHT of the Power Terminals. Fix to Existing Harnesses with Cable Ties

-
32. Secure the M13 and sensor extension to the RED SOCKET on the BACK PANEL in such a way that the connectors are located only a little above the SOCKET.

Approximately level with the power inlet terminal.

WARNING:

Do NOT allow CABLE LOOPS outside the REAR PANEL, if necessary pull back the CABLE into the DUCT.

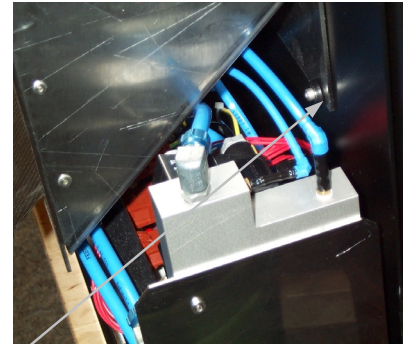


33. Check all cables are correctly routed and secured with cable ties . Replace the cover of the cable duct.
34. Replace the Pneumatic Unit taking care not to trap any cables or Pneumatic Hoses

-
35. Re-assemble FFMA ASSEMBLY and secure in the same way as the previous CHUTE ASSEMBLY

NOTE:

Take care when placing the FFMA through the aperture of the panel it will need to be twisted slightly to assist installation, you will also need to hold the Blue Hoses away from the corner to prevent them being pinched behind FFMA

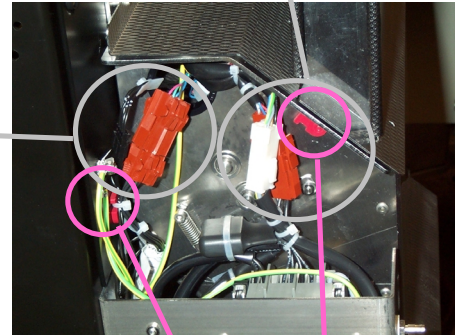


Corner of FFMA

M17 and FAN (high voltage)

36. Connect M13, M17, Fan and Sensors of FFMA.

Sensor and Stepper Motor
(low voltage)



Cable Sockets (Cable Retainers)

WARNING:

For SAFETY reasons, ensure that the connectors and wires external to the INSULATING TUBE of M17 and Fan can not touch the LOW VOLTAGE Sensor and Stepper Motor cables or connectors. After connection fix the wires and cables to the correct Cable Socket

37. Connection details:

Stepper Motor
Fan
Flap Motor
Flap Upper and Lower
switches

-
38. Replace the Flip Chamber and secure with FRONT screws

WARNING:

It is most important that the screws are tightened, otherwise the LIGHT TIGHTNESS of the FFMA will be compromised

39. Replace all covers on Miniloader 2000P
40. Carry out DOWNLOAD procedure as described in II 3477-2 for NEW SOFTWARE version 2.31 or above as supplied in the KIT

Final Test

41. With the Top Cover OFF, carry out tests on the Miniloader 2000P using both Supply and receive Magazines, pay particular attention to the action of the FLAP, both Upper and Lower Positions
42. Replace the Top Cover and make further tests using LIVE FILM, check that any Light Leak artefacts are absent
41. Explain Operation to Customer and return Miniloader 2000P for customers use.

WARNING:

Electrical Safety

After installation check the electrical safety the final assembly, use a Safety Tester to check the following:

- a.) Ground resistance test < 0.1 Ohm between the power cord ground conductor and the following components:
 - all metal parts of the Film Flip Mechanism Assembly
 - AC – FLAP Motor
- b.) Insulation resistance test > 2 MOhm

Ensure that all panels are reliably grounded and correctly mounted

Part Two

Part List for FFMA with Flip

Part Number	Description	Figure	Qty
	(FLAP MOTOR & ASSOCIATED PARTS)		
9218121	Motor (Flap Motor) M11		1
9317203	Flap		1
9317391	Pivot		2
4500521	“E” Ring		5
9216301	Cam		1
4796371	Spring Pin		1
4533351	Micro switch		2
4282791	Screw		4
9181131	Plate (Tap Strip)		2
4480032	Washer		4
9182561	Actuator		2
931 7511	Sensor Harness		1
9318211	Fan		1
9317371	Anti-vibration Nut		4
	(ROLLER DRIVE & MOTOR)		
9317381	Belt		1
9250172	Motor (Stepper Motor) M13		1
9211731	Flange Roller Pulley		2
9301851	Roller Pulley		1
9216111	Motor Pulley		1
4796371	Pin Motor Pulley		1
9212831	Pin Roller Pulley		1

Part List for FFMA with Flip (continued)

Part Number	Description	Figure	Qty
4500521	“E” Ring Motor Pulley		1
4500561	“E” Ring Roller Pulley		4
9303981	Roller (Foam)		2
9217011	Bearing		4
On Request	Lever (Tensioner)		2
8374860	Spring		2

Part Three

Installing THE MINILOADER 2000 with Lightweight Magazine facility

The Miniloader 2000 with Lightweight Magazine facility is installed in the same way as the earlier version of the Miniloader 2000.

Follow the Procedure as described in II 3477-2 11/98

Differences to this and earlier versions of the Miniloader 2000 are described in Section 4 of this publication.

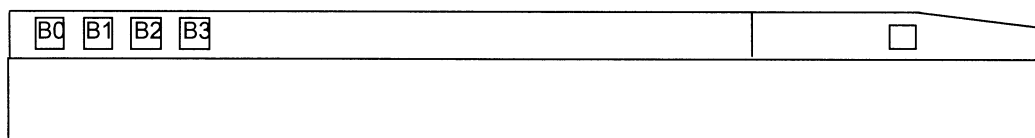
MINILOADER 2000 and MINILOADER 2000P

Magazine Coding Information

NOTE:

The magazine Coding Table below now includes the codes for the Lightweight Receive Magazines, the Receive magazine Codes are recognised in the Miniloaders 2000P and Miniloaders 2000 having Operating Software 2.31 and above.

Magazine Code-Table:



☐ = no reflective tape = logical 1

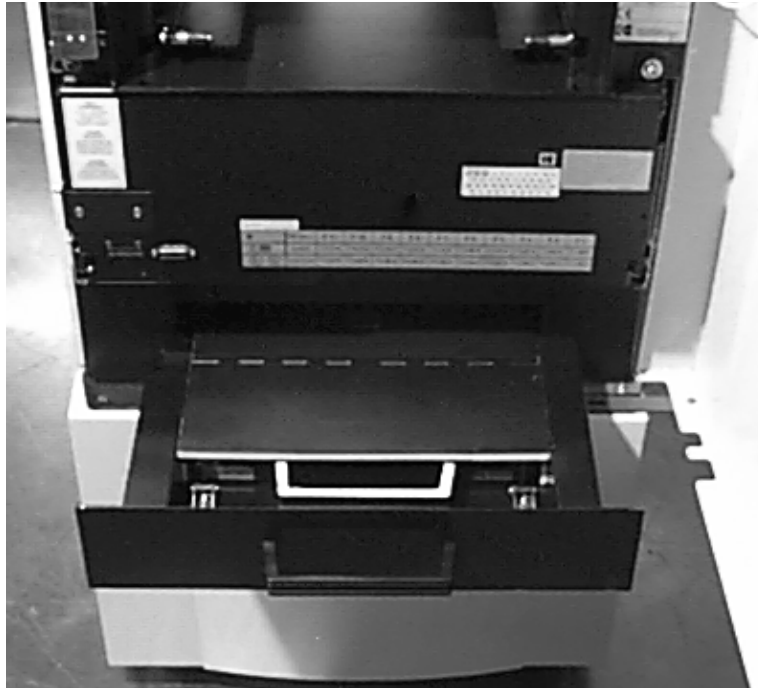
☒ = reflective code tape = logical 0

Magazine Code	B0	B1	B2	B3 (Type 2)
18x24cm M	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24x30cm M	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8x10" V	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15x30cm X	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
18x24cm M #2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
24x30cm M #2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8x10" V #2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15x30cm X #2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
18x24cm R	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
24x30cm R	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
All-in One Rec. Mag.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
no Magazine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

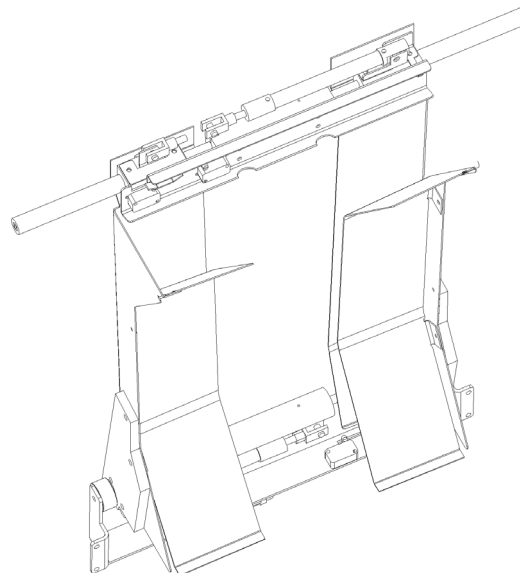
Part Four

Details of MINILOADER 2000 showing changes in Film Receiving Drawer and Changes to the Rear Film Chute

New Drawer Assembly (showing Lightweight Magazine in drawer)

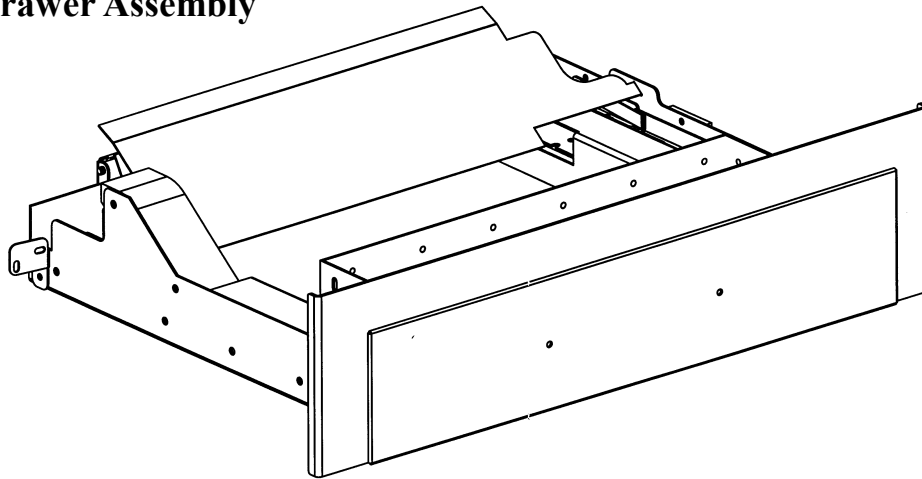


**New Chute Assembly (showing
View from Film Pocket side)**

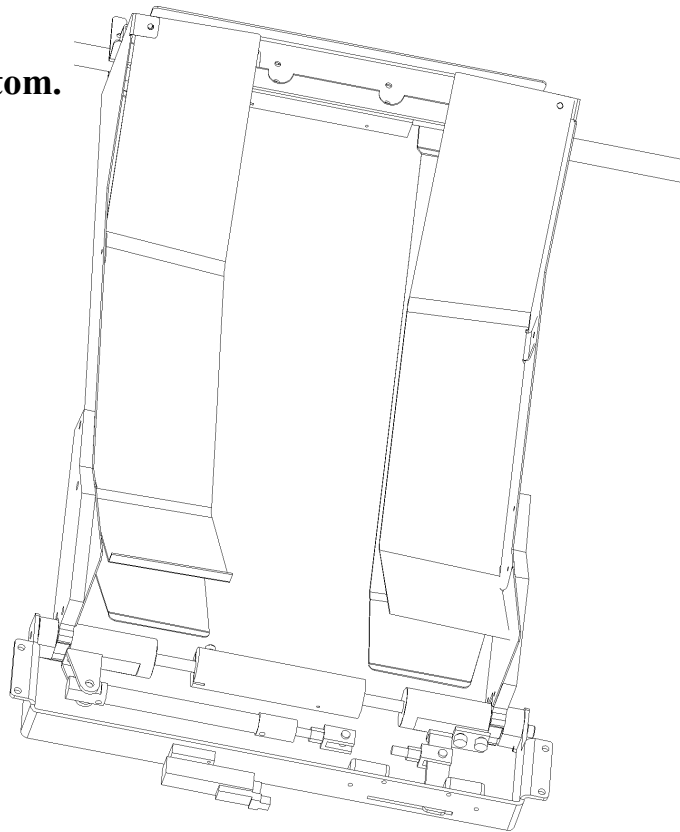


Details of MINILOADER 2000 showing changes in Film Receiving Drawer and Changes to the Rear Film Chute

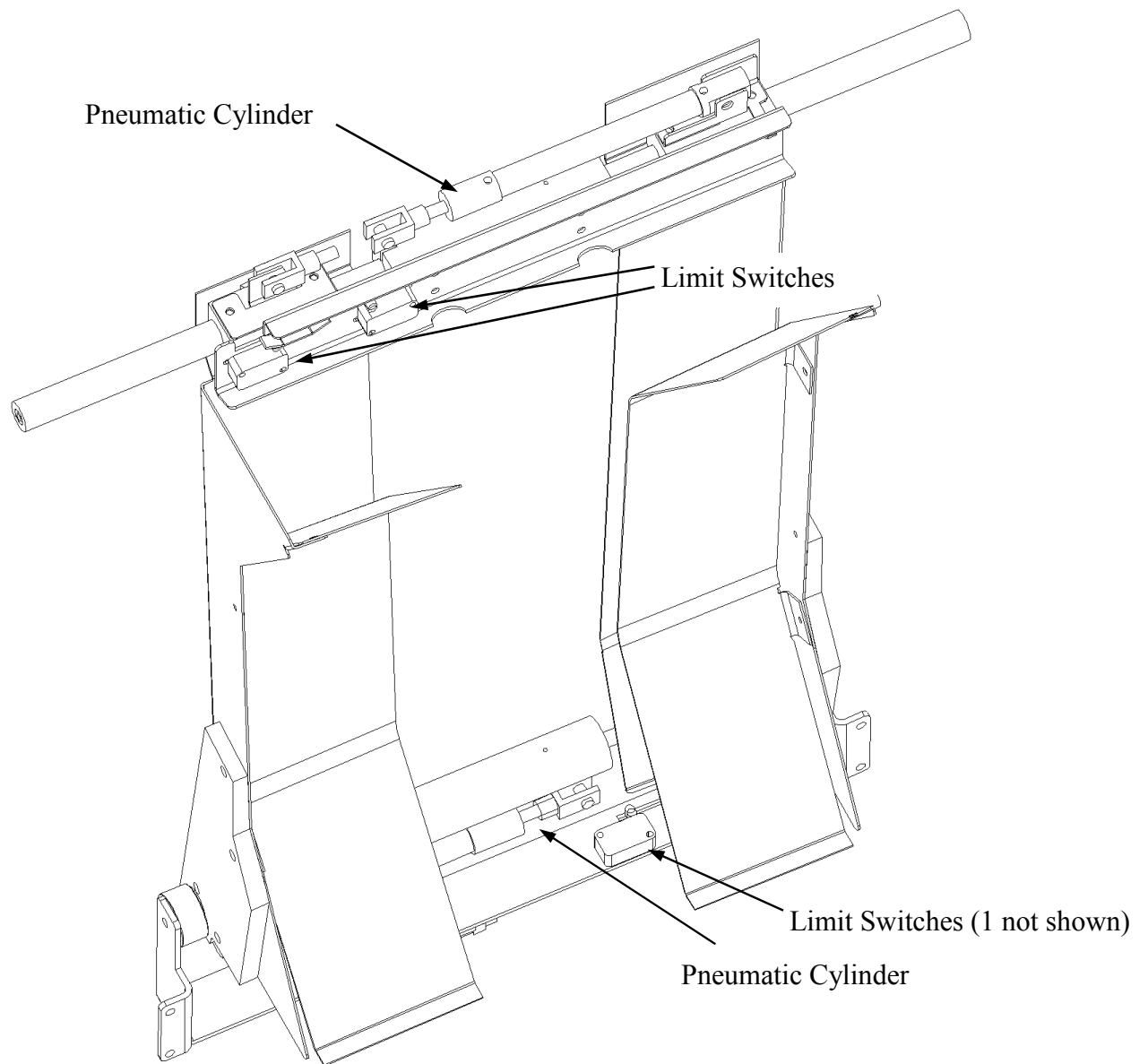
New Drawer Assembly



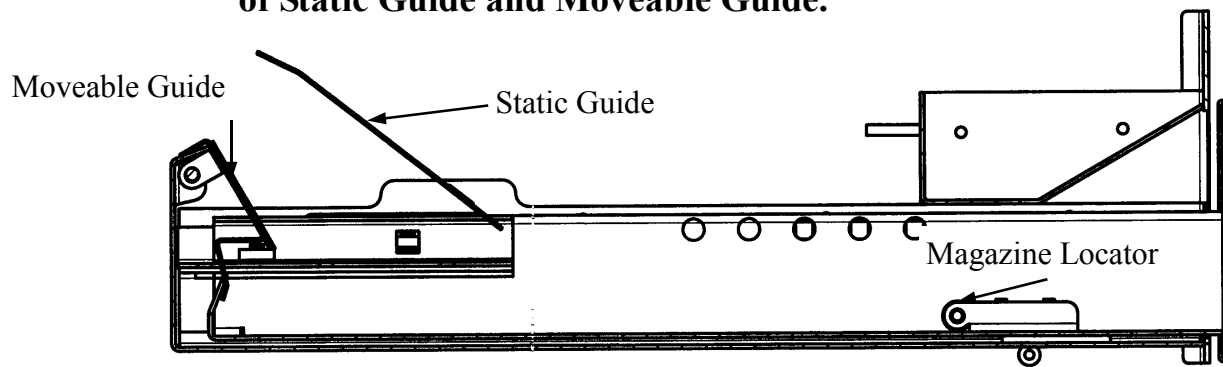
**New Chute Assembly
view from Chute Bottom.**



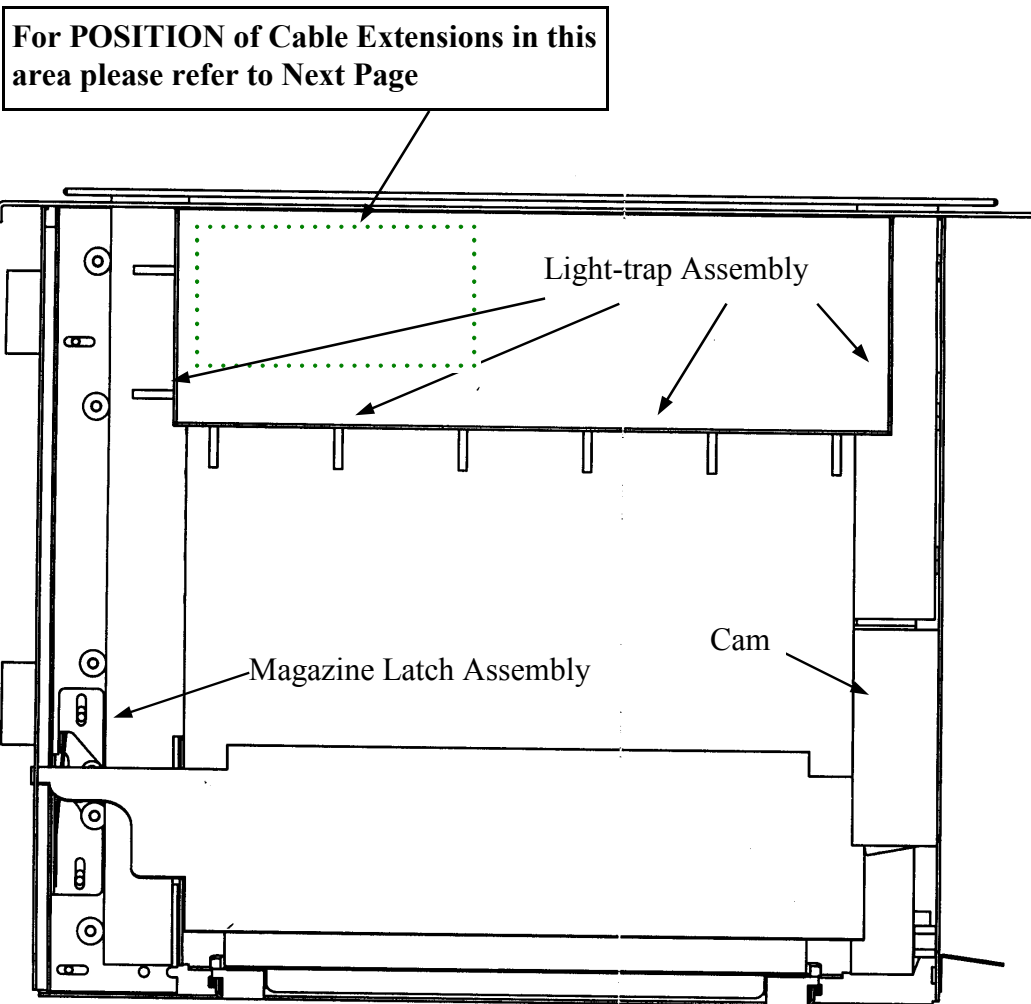
New Chute Assembly (showing main components)



**Section through Drawer Assembly showing position
of Static Guide and Moveable Guide.**



**Top (plan) View of Lightweight Receive Magazine drawer
showing Magazine Opening Cam and Light Trap assembly.**

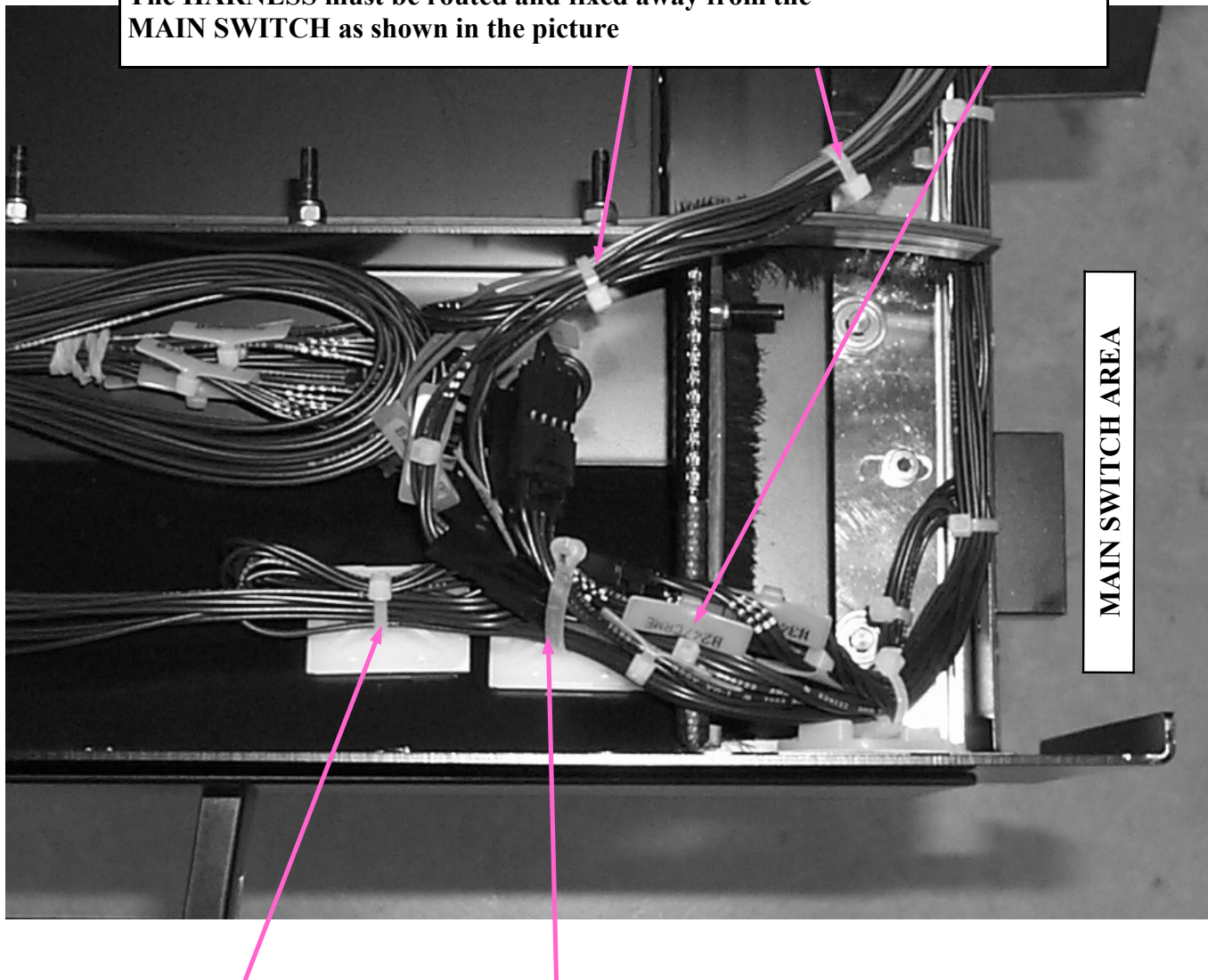


VIEW of RIGHT HAND corner of MINILOADER 2000 DRAWER

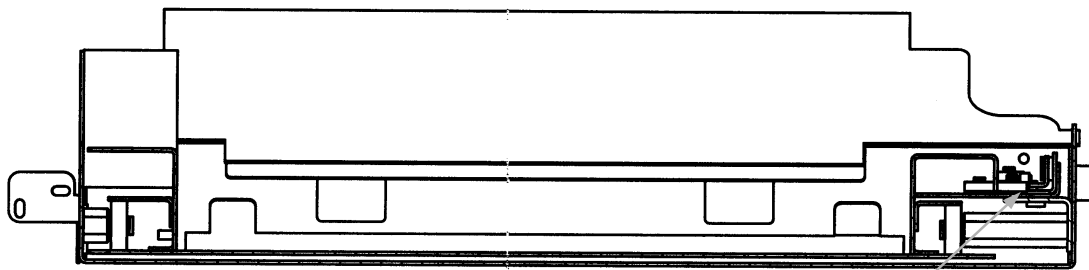
WARNING:

Fix the HARNESS to the existing cable socket after installation.

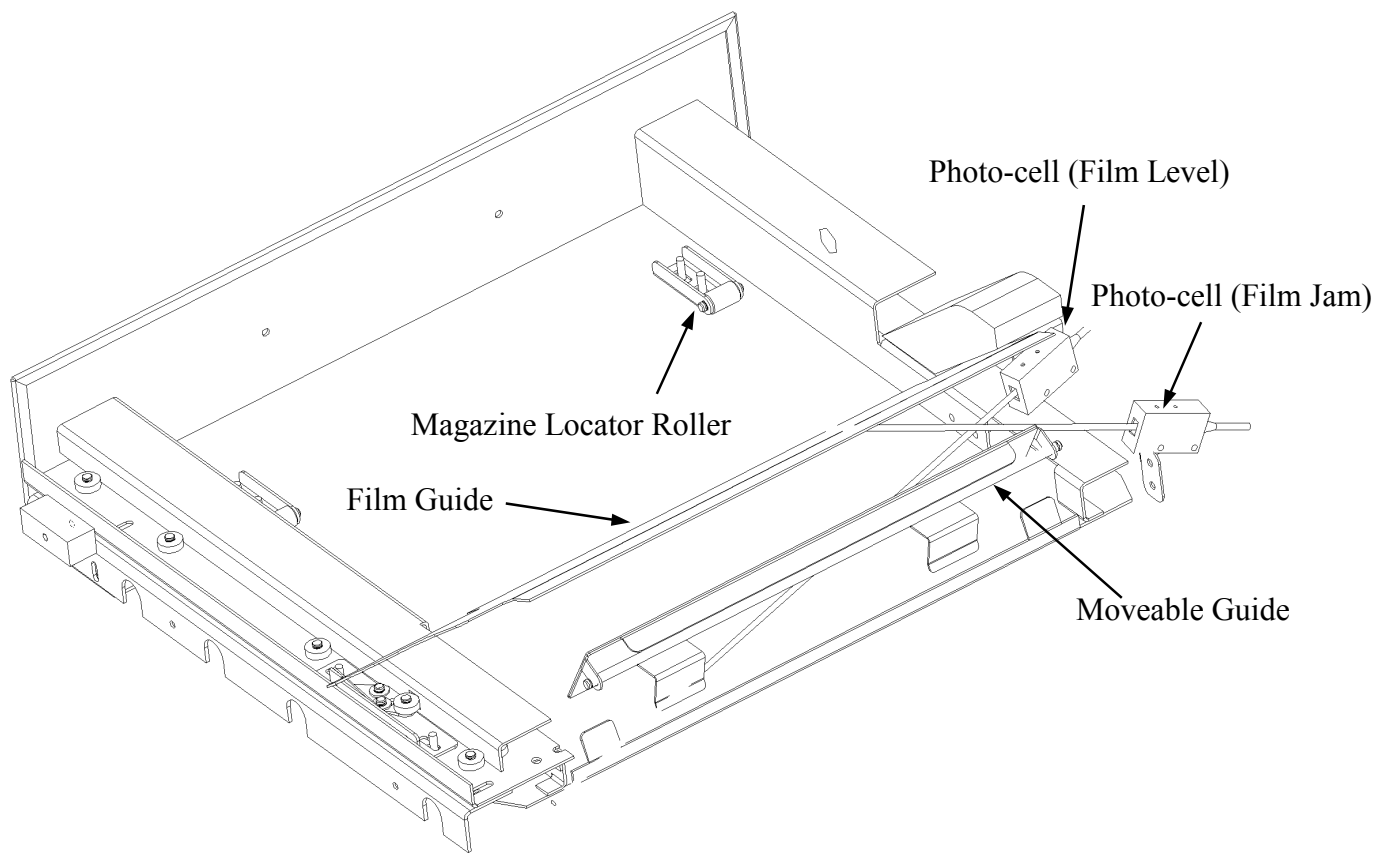
The HARNESS must be routed and fixed away from the MAIN SWITCH as shown in the picture



Fix the HARNESS to the existing cable socket after installation.



3 Photo-cells (Magazine Coding)



WARNING:

Electrical Safety

After installation check the electrical safety the final assembly, use a Safety Tester to check the following:

- a.) Ground resistance test $< 0.1 \text{ Ohm}$ between the power cord ground conductor and the following components:
 - all metal parts of the Drawer Assembly
- b.) Insulation resistance test $> 2 \text{ MOhm}$

Ensure that all panels are reliably grounded and correctly mounted

Part Five

Part List ML2000 with Lightweight Magazine (Additional Parts)

Part Number	Description	Figure	Qty
	(CHUTE PARTS)		
As IP 3477	Air Cylinder		2
As IP 3477	Micro Switch (Chute Limit Switches Top and Bottom)		4
	(MAGAZINE DRAWER ASSEMBLY)		
9302496	Magazine Latch Assembly		1
9218982	Photo-cell (Blue)		2
9308086	Harness (Photo-cell)		1
9218993	Photo-cell (Coding)		3
	MOVEABLE GUIDE PARTS		
9302236	Moveable Guide		1
8374860	Spring		2
9302626	Shaft		1
4500521	"E" Clip		2
	LIGHT TRAP		
9302856	Light Trap Brush (Large)		1
9302856	Light Trap Brush (Small) <i>Cut from 9302856</i>		2
As IP 3477	Set Screw (3 mm)		10
4853251	Nut (3 mm)		10
4480032	Washer (3 mm)		10

Part List ML2000 with Lightweight Magazine (Additional Parts *Continued*)

Part Number	Description	Figure	Qty
	(DRAWER PARTS)		
9185371	Bearing (Large) 22 mm		10
9183781	Bearing (Small)		8
4500521	“E” Clip (Small)		8
4500561	“E” Clip (Large)		10
	(MAGAZINE LOCATOR)		
9180522	Roller		2
9302321	Shaft (ASSEMBLY Including “E” Clips 4500521)		2
4500521	“E” Clip		4

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